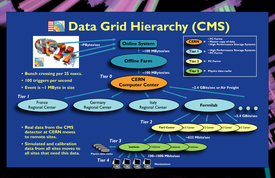
Rear Projection Cutout 49" X 68"

FUTURE HEP GRIDS: SCALING UP

HEP Production Processing

In both large scale simulation and processing of real data, scheduling of shared resources for physicists can be achieved efficiently using data grids. While still in its infancy, grid technology has provided a number of tools that are already put to use by the HEP community with the help of groups such as PPDG, GriPhyN, and iDVGL. PPDG is leading an effort to bring Condor and Globus tools to HEP experiments in the form of job scheduling tools and file replication services. GriPhyN is leading the concept of Virtual Data and automatic regeneration of processed data. iVDGL, the International Virtual Data Grid Laboratory, is a collaborative effort to build a development platform for the Virtual Data Toolkit (VDT). The world-wide infrastructure will be used to test core grid concepts.



High Energy Physics is leading one of the most ambitious efforts to generate, store, and process large amounts of data in a distributed fashion.

Terabytes of Simulated Data

The CMS collaboration works with PPDG, GriPhyN, and IDVGL to produce tools to do distributed production processing on a grid. The demos currently running on the USCMS test grid include:

(A) CHIMERA, a system which uses Virtual Data Language in creating data processing jobs from a metadata description.

(B) MOP, a system for packaging data processing jobs for DAGMAN, a part of the Condor High Throughput Computing System. These jobs run on remote systems using CondorG and the Globus JobManager.

(C) CLARENS is a system for analyzing ROOT format data remotely. Demonstrations of Chimera, MOP, and CLARENS distributed analysis are currently running on the USCMS Test Grid, shown in the monitors at right.

Grid Monitoring

MONITOR
11.875" X 14.75"

Above is shown real time monitoring data from the USCMS Test Grid collected using many local tools interfaced to both MDS and MonaLisa. The display is from MonaLisa.

From Concepts to Data

MONITOR
11.875" X 14.75"

Physics Data shown above is generated and displayed using the CHIMERA/MOP/CLARENS system. Data in ROOT format from around the country is displayed using CLARENS.